

Allergic Reactions to "Kissing Bug" Bites

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ALLERGIC REACTIONS to the bite of the kissing bug (conenose bug), *Triatoma protracta*, have been encountered frequently by the senior author every year during the past decade in the Mariposa foothill area of the Sierra Nevada range. In recent years the number of such cases appears to be more frequent and there has been an increasing interest in this problem in this area and in Southern California on the part of physicians, entomologists and the general public. A recent review and survey⁵ by the Bureau of Vector Control of the California State Health Department indicated that in Mariposa County alone there were at least 110 persons who in past years have had one or more allergic reactions to the bite of the kissing bug. Since some of the patients have had as many as 15 systemic allergic reactions in a season, one can appreciate that it is a real personal and public health problem and that certain persons have moved from the area to avoid the bite.

In the only extensive clinical report on kissing bug allergy, Shields and Walsh⁴ summarized their experience with 45 patients seen in a dermatology practice. Our experience confirms theirs with respect to the painless nature of the bite, the uniform finding of an engorged bug, the rarity of bites in cold seasons and the various skin lesions that can be caused by the bites. They grouped the local reactions under four headings.

1. Papular lesions with central punctum.
2. Small vesicles in 2 to 3 cm. area.
3. Giant urticaria with brawny edema.
4. Unilateral hemorrhagic nodular to bulbous lesions on hands or feet resembling erythema multiforme.

Shields and Walsh indicated that in one of their patients severe systemic reactions did occur. Other reports in the medical¹ and entomological^{2,6} literature have also referred briefly to cases of systemic allergic reactions due to *Triatoma* and other members of the family Reduviidae.

In this brief clinical report we would like to emphasize and describe some of the variations in the systemic reactions observed and record our results of direct skin testing with a specially prepared extract of *Triatoma protracta*.

The clinical picture was a puzzling one when first observed many years ago, but it is now easily recog-

• In addition to local allergic skin reactions to the bite of the kissing bug, *Triatoma protracta*, the systemic reactions can vary from a mild urticarial reaction to a severe anaphylactoid reaction consisting of shock, generalized angioneurotic edema and laryngeal edema. The diagnosis can be established by the clinical history, the finding of an engorged kissing bug, the presence of typical local and systemic signs, and finally, a positive reaction to a skin test with an extract of the bug.

nizable and almost predictable in its course. The following two cases illustrate some of the variations in the clinical manifestations.

CASE 1. A 14-year-old girl was awakened at 3 a.m. with general itching and a few hives scattered over her body. She felt slightly nauseated for a few minutes and after a few hours the itching and hives subsided. (In some milder cases, the patient is awakened by itching at only one spot on the leg or arm. In most cases an engorged kissing bug can be found in or around the bed covers, if careful search is made.)

CASE 2. A 45-year-old woman awakened at 5 a.m. and was aware of a severe itching over her entire body and especially over the left elbow. She was nauseated and in getting up and going to the bathroom, became very faint. She had to lie down, and vomited on the floor. She was pale and felt a tightness and constriction of the throat. There were some hives seen on her body. She lay on the floor and after a few minutes felt a little better, and was taken to the hospital emergency room. Results of physical examination at this time were within normal limits except for generalized urticaria and mild angioneurotic edema of the face. Immediate treatment consisted of giving 0.5 cc. 1:1,000 epinephrine subcutaneously and chlorpheniramine maleate 10 mg. parenterally. Epinephrine in oil, 1:500, was also injected and the patient was given prednisolone, 20 mg. daily for three days.

In a few cases we have found the patients to be in shock with a blood pressure of 40/0 mm. of mercury with all the physical findings consistent with shock. In general, the following complaints, listed in the order of frequency, have been noted: itching at the site; generalized itching; generalized hives; fainting, nausea and vomiting; swelling of the eyes;

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swelling of tongue and "throat" with difficulty in swallowing, speaking and breathing, etc. Physical findings are usually consistent with the complaints and include: urticaria, angioneurotic edema, immediate and delayed local reaction at site of bite, hypotension, edema of tongue and larynx.

SKIN TEST RESULTS

The allergic nature of these reactions suggested that one might expect to find skin hypersensitivity to the proteins of the *Triatoma* bug. Defatted and minced *Triatoma protracta** were extracted in 50 per cent glycerine-buffered saline solution in a proportion of one gram to 40 cc. of extracting fluid. After appropriate sterility and safety testing, this extract was tested by the scratch method on 12 known patients. Eleven of the patients had immediate positive cutaneous reactions consisting of a wheal from 5 to 20 mm. in size. The twelfth person was positive to an intradermal test of 0.05 cc. of a 1:1,000 dilution. In all cases control tests were performed with diluent and were negative. Cutaneous testing with the *Triatoma* extract in non-allergic persons gave negative results.

COMMENT

The bite of the *Triatoma* bug is judged to be the cause of these allergic reactions on the basis of the following observations:

1. Previous reports, published and unpublished, are consistent with our experience.
2. Direct observation of an allergic reaction following the bite in several cases.
3. Seasonal occurrence corresponding to kissing bug prevalence.
4. Finding of the engorged bug in or around bed of person reacting in 75 per cent of the cases.
5. Local reaction at site of the bite in 75 per cent of the cases.
6. Positive skin test reactions in the 12 patients tested.

For treatment we have used parenteral injection of epinephrine or corticosteroids and the administration of antihistamines. Because so many of the bites occurred during the night, oral administration at bedtime of delayed absorption forms of the antihistamines has been used in a number of patients. While such therapy seems to ameliorate the symptoms, it does not abolish the reactions to the bite, and therefore, is not too satisfactory. To minimize exposure to the bugs, a program of clearing of

*The *Triatoma* were obtained through the courtesy of R. R. Ryckman, Ph.D., Department of Microbiology, Loma Linda University, Loma Linda, California, and the extract was prepared by Berkeley Biologicals, Berkeley, California.

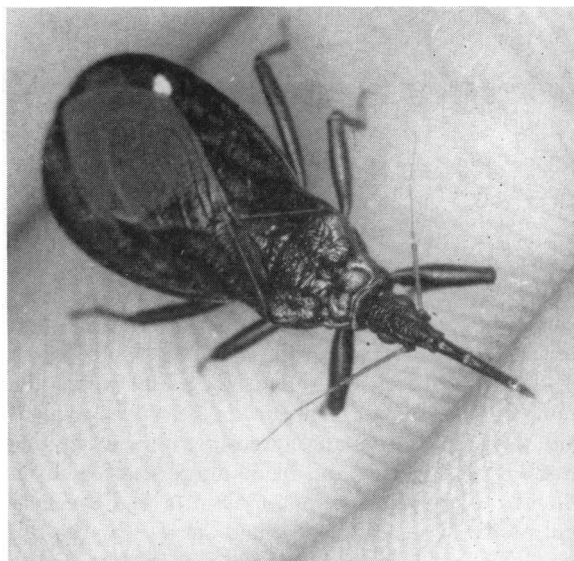


Figure 1.—*Triatoma protracta*, Kissing bug or Conenose bug, resting on technician's finger. (Courtesy of Bureau of Vector Control, Calif. State Department of Health.)

underbrush, rubbish and wood rat nests in the vicinity of the house has been helpful. In a few cases the patients have moved out of the foothill area to avoid the bite.

Because of the severity of the reactions in some patients we have started an investigation of the value of desensitization injections in the hypersensitive. In light of the objective nature of the reaction and the frequency of the bites, an objective evaluation of desensitization would appear to be quite feasible. Further studies on the immunological aspects of this hypersensitivity are also desirable. Passive transfer studies to demonstrate the humoral nature of the sensitizing factor would show more conclusively that we are dealing with the usual atopic type of reactivity. Perlman³ recently called attention to the possibility of initial sensitization and cross-reaction between the box elder bug and the kissing bug.

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